

**AMENDMENTS TO THE CLAIMS**

Claims 1-6 (Canceled)

7. (New) A method for controlling an amount of fuel delivered to an engine upon start in a vehicle, said method including the steps of:

measuring a conductance of an air/fuel sensor heater;

sensing an engine operating parameter using a sensing means;

using the measured conductance of the air/fuel sensor heater and sensed engine operating parameter to determine a length of time the engine was shut off, by a controller operatively in communication with the air/fuel sensor heater and the engine parameter sensing means;

using the length of time the engine was shut off in determining a corrected amount of fuel to be delivered to the engine by a fuel injection system; and

delivering the corrected amount of fuel to the engine when the engine starts up.

8. (New) The method of claim 7 wherein said step of determining the value of conductance further includes the step of using the controller to calculate conductance from measured impedance values of the air/fuel sensor heater.

9. (New) The method of claim 7 wherein the value of conductance decreases as the length of time the engine was shut off increases.

10. (New) The method of claim 7 wherein the engine operating parameter is engine coolant temperature.

11. (New) The method of claim 7 wherein the engine operating parameter is intake air temperature.

12. (New) A method for controlling an amount of fuel delivered to an engine upon start in a vehicle, said method including the steps of:

measuring a conductance of an air/fuel sensor heater;

sensing an engine operating parameter using a sensing means;

using the measured conductance of the air/fuel sensor heater and sensed engine operating parameter to determine a length of time the engine was shut off, by a controller operatively in communication with the air/fuel sensor heater and the engine parameter sensing means, wherein the conductance decreases as the length of time the engine was shut off increases;

using the length of time the engine was shut off in determining a corrected amount of fuel to be delivered to the engine by a fuel injection system; and

delivering the corrected amount of fuel to the engine when the engine is started.

13. (New) The method of claim 12 wherein the step of determining the value of conductance further includes the step of using the controller to calculate conductance from measured impedance values of the air/fuel sensor heater.

14. (New) The method of claim 12 wherein the engine operating parameter is engine coolant temperature.

15. (New) The method of claim 12 wherein the engine operating parameter is intake air temperature.

16. (New) A system for controlling an amount of fuel to be delivered to an engine at restart, said system comprising:

an air/fuel sensor heater having a conductance;

an engine parameter sensing means;

a fuel injection system; and

a computer controller operatively in communication with said fuel injection system and said air/fuel sensor heater, wherein on an engine start said computer controller uses the value of conductance of said air/fuel sensor heater and the input from said engine parameter sensing means to determine how long the engine was shut off and corrects the amount of fuel delivered by the fuel injection system using how long the engine was shut off.